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Science and Technology

River Forecast Center Development Management

Process for Developing and Sharing River Forecast Center Applications

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Process for Developing and Sharing River Forecast Center Applications

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1. Introduction. This instruction provides details on the implementation of the National Oceanic and Atmospheric Administration’s National Weather Service (NWS) Policy Directive 80-7 on River Forecast Center (RFC) Development Management (RDM). The objective of Office of Hydrologic Development’s (OHD) RDM program is to manage science and software development among RFCs to ensure the efficient and economical use of NWS resources to support the Hydrologic Services Program. This directive describes the framework for collaborative application development among RFCs. This process is part of the RDM process described in NWS Instruction 80-701.

2. Process for Developing and Sharing RFC Applications. The process RFCs will use to develop and share applications is detailed below.

2.1 Determine if Another Office Has Created or is Interested in an Application. Before developing a new application, offices will examine the AWIPS Local Applications Database (LAD) and use the “rfcawips” listserver to inquire about existing applications that would fulfill the requirement and/or to gauge interest among other offices for developing a new application. Interested offices will use the listserver, phones, and e-mail to discuss requirements, priorities, time-lines, resources, etc. to further define the project.

2.2 Determine Local, Regional, or National Interest/Priority. An application will be categorized as local, regional, or national depending on how many offices are involved and the overall scope of the project in terms of importance and resource requirements. The category will be determined by the interested offices. Local projects will be those in which a single office is involved and further coordination is left to the discretion of the office. Regional projects will be those in which several offices commit resources to plan, develop, and implement an application

cooperatively. The term “regional” does not imply that all offices involved in the project must be from the same NWS region. National projects will be those which require resources beyond the those of local offices or have AWIPS baseline implications. These include projects for an RFC to update nationally delivered software.

2.3 Project Approval. The approval for the proposed project will depend on its scope. Local projects may be proposed to and approved by the local Hydrologist-in-Charge (HIC). A written description that outlines the purpose and estimates required resources must be prepared for all regional and national projects. This description will be submitted to the appropriate regional headquarters for action. Regional projects will be approved by the regional headquarters of all the cooperating offices. For national projects, the regional headquarters will work with the RFC development manager and may offer the RFC resources to fulfill requests according to the hydrology requirements process.

2.4 Requirements, Development, Testing, and Support Coordination. All regional and national projects will be handled by the RFC Development Management (RDM) process (NWS Instruction 80-701). In that process, a team is formed to coordinate requirements, development, testing, and support of the application. Information on all regional and national projects will be available on the RDM website. Local projects will be managed by the HIC or their designate.

2.5 Register, Document, and Disseminate the Application. The AWIPS LAD will be used for registration, documentation, and distribution of regional and local RFC applications. RFCs will register their use of applications with the LAD to facilitate being able to contact all users of an application for input on updates, notification of new versions or bugs, etc.. Applications will be submitted to the LAD in the form of binaries. The RFC development manager will solicit suggestions for updates to the LAD to improve its usefulness for RFC applications. These suggestions will be submitted to the Local Applications Working Group.

2.6 Local and Regional Application Updates. RFCs registered as application users will be polled by the supporting office whenever changes to an existing local or regional application are requested or planned to insure all users are aware of updates. Polling will take place through email to the rfcawips listserver. The supporting office may make the requested or planned updates or provide the source code to another office to make the changes. After changes are made, the updated source code will be submitted back to the supporting office, the application will be updated on the LAD, and all registered users will be notified.

2.7 National Application Updates National programs may also be updated by a cooperating RFC after first gaining approval as outlined in step 2.3. The requirement for the program update will come from the hydrology requirements process. The steps for updating national software are:

- a. The cooperating RFC will request official AWIPS baseline software from OHD.

- b. OHD will provide the baseline source code to the cooperating office. They will also provide any needed libraries and makefiles to compile an executable program.
- c. The cooperating office will make the needed changes to the baseline code and test to ensure it still runs in the AWIPS environment.
- d. When finished with the enhancement, the cooperating office delivers the updated code, documentation on the changed source modules, and test instructions with test data to OHD.
- e. OHD will incorporate the updates into the AWIPS baseline and shepherd them through the AWIPS testing and release process. The updated application may also be made available on the OHD ftp site prior to the AWIPS release.

2.8 RFC Local/Regional Applications Become National Applications. As part of the hydrology requirements process, regions may offer RFC developed applications to fulfill requirements on the list. The following steps will be followed to produce a national application.

- a. The RFC will develop and deliver the original software, documentation, test plan, and test data to OHD.
- b. OHD will make changes needed to generalize the application for all RFCs and address AWIPS system issues.
- c. OHD will create an AWIPS baseline of the application and shepherd it through the AWIPS testing and release process.
- d. Updates to the national baseline by a cooperating RFC will follow procedures outlined in 2.7.

3. Products Generated by Applications. All application-generated products which are made available to external NWS customers and partners on the web or other public distribution mechanisms will have product description documents (PDD) prepared for them in accordance with procedures in NWS Instruction 10-102.